New claims

1. Method for burning a fluid fuel (B) in a burner comprising a catalytic burner which is disposed upstream of the fuel outlet (39) of a primary burner (37) in the direction of flow (33) within a flow channel (31A, 31B), in which fuel (B) is reacted in a catalytic reaction in the catalytic burner (35A, 35B), whereupon catalytically pre-reacted fuel (B) continues to be burned in a secondary reaction, wherein a swirling component is impressed onto the pre-reacted fuel (B), characterized in that the catalytically pre-reacted fuel (B) flows into the flow channel (31A, 31B) at an angle of from 15° to 75° relative to a primary axis defined by the direction of flow (33).

2. Method according to Claim 1,
characterized in that pre-reacted, swirl-subjected fuel (B) is transferred for the secondary reaction into a combustion space (27), wherein a vortex is created.

3. Method according to Claim 2,
characterized in that adjustment of the dwell time of the pre-reacted fuel (B) for the transfer allows the secondary reaction to be ignited in a spatially controlled manner in the combustion space (27).

4. Method according to Claim 3,
characterized in that a homogeneous non-catalytic secondary reaction is ignited.

5. Method according to any one of the preceding claims,
characterized in that the fuel (B) is burned completely in the secondary reaction.

6. Method according to any one of the preceding claims, characterized in that a gas or a liquid fuel, especially fuel gas or fuel oil, is burned as the fluid fuel (B).

7. Burner (10) for burning a fluid fuel (B), in which the fuel outlet (41) of a catalytic burner (35A, 35B) is disposed upstream of the fuel outlet (39) of a primary burner (37) in the direction of flow (33) of the fuel (B) within a flow channel (31A, 31B) such that the fuel (B) is catalytically reacted, wherein the catalytic burner (35A, 35B) has a number of catalytically effective elements (43A, 43B, 43C, 43D) which are arranged such that a vortex is created in the flow channel (31A, 31B), and the discharge of the catalytically effective elements (43A, 43B, 43C, 43D) into the flow channel (31A, 31B) takes place at an angle of from 15° to 75° relative to a primary axis defined by the direction of flow (33).

8. Burner (10) according to Claim 7, characterized in that the vortex in the wake of the catalytically effective elements (43A, 43B, 43C, 43D) is created downstream of the fuel outlet (41) thereof.

9. Burner (10) according to Claim 7 or Claim 8, characterized in that the catalytically effective elements (43A, 43B, 43C, 43D) are arranged in a plane perpendicular to the direction of flow (33), wherein the fuel outlet (41) of the catalytically effective elements (43A, 43B, 43C, 43D) discharges into the flow channel (31A, 31B).

10. Burner (10) according to any one of Claims 7, 8 or 9, characterized in that the length (L) of the flow channel (31A, 31B) is adapted for setting a predetermined dwell time for

fuel (B) in the flow channel (31A, 31B).

11. Burner (10) according to any one of Claims 7 to 10, characterized in that a catalytically effective element (43A, 43B, 43C, 43D) is fashioned as a honeycomb catalytic converter which has as a basic component at least one of the substances titanium dioxide, silicon oxide and zirconium oxide.

12. Burner (10) according to Claim 11, characterized in that the honeycomb catalytic converter has as a catalytically active component a noble metal or metal oxide which has an oxidizing effect on the fluid fuel (B).

13. Combustion chamber (4) comprising a burner (10) according to any one of Claims 7 to 12.

15. Gas turbine (1) comprising a combustion chamber (4) according to Claim 13.